

DETAILED ACTION

Election/Restrictions

1. This application is in condition for allowance except for the presence of claims 1-12, 25-32, 41-60 directed to a species non-elected without traverse. Accordingly, claims 1-12, 25-32, 41-60 have been cancelled.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Bradley Meier (Reg. No. 44,236) on Friday, March 26, 2010.

The application has been amended as follows:

Claims 1-12, 25-32, 41-60 have been cancelled.

Claim 13 (currently amended): An image sensor for sensing a received image, comprising:

a substrate;

a photo TFT disposed on the substrate to generate a photocurrent responsive to the received image, the photo TFT including,

a source electrode directly coupled to a select line corresponding to an adjacent image sensor,

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a gate electrode directly coupled to a bias line,
a drain electrode, and
a semiconductor layer directly coupled to the source and drain electrodes; and
a storage capacitor disposed on the substrate and directly coupled to the gate electrode and drain electrode of the photo TFT, the storage capacitor storing a charge generated by the photocurrent.

Claim 15 (currently amended): The image sensor of claim 13, further comprising:

a readout TFT disposed on the substrate and including,
a gate electrode directly coupled to a second select line,
a source electrode directly coupled to the drain electrode of the photo TFT,
a drain electrode directly coupled to a data line, and
a semiconductor layer directly coupled to the source and drain electrodes.

Claim 33 (currently amended): An image sensor array for sensing a received image, comprising:

a substrate;
a plurality of bias lines disposed on the substrate;
a plurality of data lines disposed on the substrate;
a plurality of select lines disposed on the substrate;

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a plurality of photo TFTs disposed on the substrate to generate a photocurrent responsive to the received image, each photo TFT including,

a source electrode directly coupled to a select line corresponding to an adjacent readout TFT,

a gate electrode directly coupled to a corresponding bias line,

a drain electrode, and

a semiconductor layer directly coupled to the source and drain electrodes;

a plurality of storage capacitors disposed on the substrate, each storage capacitor directly coupled to the corresponding bias line and to the drain electrode of a corresponding photo TFT, each storage capacitor storing a charge generated by a photocurrent; and

a plurality of readout TFTs disposed on the substrate, each readout TFT including,

a gate electrode directly coupled to a corresponding select line,

a source electrode directly coupled to the drain electrode of a corresponding photo TFT and directly coupled to the storage capacitor,

a drain electrode directly coupled to a corresponding data line, and

a semiconductor layer directly coupled to the source and drain electrodes,

wherein each readout TFT passes a current to a corresponding data line in response to the discharge of a corresponding storage capacitor.

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Claim 61 (currently amended): An image sensor for sensing a received image, comprising:

a substrate;

a photo TFT to generate a photocurrent responsive to the received image, the photo TFT including,

a source electrode directly coupled to a select line corresponding to an adjacent image sensor,

a gate electrode directly coupled to a bias line,

a drain electrode, and

a semiconductor layer directly coupled to the source and drain electrodes; and

a storage capacitor disposed between the substrate and the photo TFT and directly coupled to the gate electrode and drain electrode of the photo TFT, the storage capacitor storing a charge generated by the photocurrent.

Claim 64 (currently amended): The image sensor of claim 61, further comprising:

a readout TFT disposed on the substrate and including,

a gate electrode directly coupled to a second select line,

a source electrode directly coupled to the drain electrode of the photo TFT,

a drain electrode directly coupled to a data line, and

a semiconductor layer directly coupled to the source and drain electrodes.

Allowable Subject Matter

3. Claims 13-24, 33-40, and 61-65 are allowed.
4. The following is an examiner's statement of reasons for allowance:

Regarding independent claim 13, the prior art of record fails to teach or fairly suggest the combination of all limitations of claim 13 that includes **“a photo TFT disposed on the substrate to generate a photocurrent responsive to the received image, the photo TFT including,**

a source electrode directly coupled to a select line corresponding to an adjacent image sensor,

a gate electrode directly coupled to a bias line,

a drain electrode, and

a semiconductor layer directly coupled to the source and drain electrodes;

and

a storage capacitor disposed on the substrate and directly coupled to the gate electrode and drain electrode of the photo TFT, the storage capacitor storing a charge generated by the photocurrent.”

Regarding independent claim 33, the prior art of record fails to teach or fairly suggest the combination of all limitations of claim 33 that includes **“each photo TFT including,**

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a source electrode directly coupled to a select line corresponding to an adjacent readout TFT,

a gate electrode directly coupled to a corresponding bias line,

a drain electrode, and

a semiconductor layer directly coupled to the source and drain electrodes;

a plurality of storage capacitors disposed on the substrate, each storage capacitor directly coupled to the corresponding bias line and to the drain electrode of a corresponding photo TFT, each storage capacitor storing a charge generated by a photocurrent...”

Regarding independent claim 61, the prior art of record fails to teach or fairly suggest the combination of all limitations of claim 61 that includes “**a photo TFT to generate a photocurrent responsive to the received image, the photo TFT including,**

a source electrode directly coupled to a select line corresponding to an adjacent image sensor,

a gate electrode directly coupled to a bias line,

a drain electrode, and

a semiconductor layer directly coupled to the source and drain electrodes;

and

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a storage capacitor disposed between the substrate and the photo TFT and directly coupled to the gate electrode and drain electrode of the photo TFT, the storage capacitor storing a charge generated by the photocurrent.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Waechter (US 6,300,977) discloses a read-out circuit for active matrix imaging arrays.

Young (US 6,738,031) discloses an active matrix electroluminescent display device has conductive layer of storage capacitor extending transversely of semiconductor strip of TFT over one contact region.

Mochizuki (US 2006/0249763) discloses a radiation image pickup device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHIA-WEI A. CHEN whose telephone number is

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(571)270-1707. The examiner can normally be reached on Monday - Friday, 7:30 - 17:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lin Ye can be reached on (571) 272-7372. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lin Ye/
Supervisory Patent Examiner, Art Unit 2622

/C. A. C./
Examiner, Art Unit 2622